

**IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION**

ALBERTO PATINO, et al.,
Plaintiffs,

vs.

CITY OF PASADENA,
Defendant.

§
§
§
§
§
§
§

Civil Action No. 4:14-CV-03241-LHR

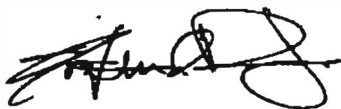
DECLARATION OF NORFLEET (BILL) RIVES, Ph.D.

1. My name is Norfleet (Bill) Rives, Ph.D. I am over twenty-one years of age and fully qualified to make this declaration. Except where otherwise indicated, the facts set out in this declaration, and within my attached report, are within my personal knowledge. I make this declaration under penalty of perjury and pursuant to 28 U.S.C. § 1746.

2. I was retained by the City of Pasadena to serve as an expert in this case. My findings and opinions in this matter, as well as the other information required by Federal Rule of Civil Procedure 26(A)(2)(B), are contained in my expert report of December 16, 2015, which is attached in its entirety as Exhibit A to this declaration, and incorporated by reference as though fully restated herein.

Pursuant to 28 U.S.C. Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing, including the attached report, is true and correct to the best of my knowledge, information, and belief.

Executed on the ____29th____ day of June, 2016.



Norfleet (Bill) Rives

EXPERT REPORT

Prepared by Norfleet W. (Bill) Rives
December 16, 2015

RE: ***Alberto Patino, et al. vs. City of Pasadena (Texas)***

Civil Action No. 4:14-CV-03241-LHR

United States District Court for the Southern District of Texas, Houston Division

My name is Norfleet Williamson (Bill) Rives. I reside in Columbus, Ohio. I am a Senior Lecturer in the Department of Finance in the Fisher College of Business at The Ohio State University. During the last several decades, I have prepared expert reports and provided expert testimony on demographic and statistical analysis of districting plans associated with federal Voting Rights Act litigation. This work has included the use of census data to evaluate the economic and social characteristics of alternative plans and the use of local population and housing data to track demographic growth and change. A copy of my curriculum vitae is attached to this report.

I have been retained by the defendant in this case to review and evaluate demographic information and analysis submitted by plaintiffs' experts. My compensation for this work is \$175 per hour, plus expenses.

The findings presented in this report represent the application of conventional methods of demographic and statistical analysis. To prepare my report, I relied on the following sources of demographic and statistical information:

- 1990 Census of Population and Housing:
PL94-171 Redistricting Database
Special Tab 127-J, citizen population by age, sex, race, and Hispanic origin
- 2000 Census of Population and Housing:
PL94-171 Redistricting Database
Special Tabulation 56, citizen population by age, sex, race, and Hispanic origin
- 2010 Census of Population and Housing:
PL94-171 Redistricting Database
- American Community Survey (ACS):
2005-2014 One-Year ACS databases
2005-2007, 2008-2010 and 2011-2013 Three-Year ACS databases
US Department of Justice special tabulations of 2008-2012 and 2009-2013 databases to produce citizen population of voting age by race and Hispanic origin for census block groups
- Data for total and Spanish-surname registered voters (SSRV) provided by the Texas Secretary of State for January 2011 and the Harris County Elections Department for March 2015
- Texas State Data Center, Office of the State Demographer:
Projections of the Population of Texas and Texas Counties, by Age, Sex, Race/Ethnicity, 2010-2050, released November 2014, projections for Harris County

- Houston-Galveston Area Council, Houston, Texas:
Regional Growth Forecast for Population, Households and Jobs, 2nd Quarter
2015 Update, projections for Pasadena City

This report presents my principal findings to date. I may develop additional findings.

City of Pasadena: A Demographic Introduction

Under the current districting plan, adopted in March 2014, the City Council is divided into six single-member districts (A-F). In addition, two other Council seats (Districts G and H) are at-large places, as is the mayor's seat.

Exhibit 1 presents a detailed street map showing the boundaries of the City and the boundaries of the six single-member districts.

Exhibit 2 contains detailed demographic information for each single-member district and the City as a whole.

An examination of these two exhibits reveals certain important information about the City and its system of council districts. First, the citywide results:

- At the time of the 2010 Census, the City was divided into 3,355 census blocks (a block is the smallest geographic unit for which census data are reported).
- Of these 3,355 blocks, 1,914 (57%) had zero population.
- Of the 1,441 blocks (43%) that did have population, almost all (95%) had at least one Hispanic resident of voting age.
- Of the 1,374 blocks that had Hispanic residents of voting age, all 1,374 also had Hispanic citizens of voting age – members of the City's pool of eligible voters.

As these citywide data clearly indicate, by the time of the 2010 Census, almost all the City's occupied census blocks had at least one Hispanic citizen of voting age. Stated less formally, by the time of the 2010 Census, Hispanic citizens of voting age resided throughout the City, not just in certain areas.

Now, notable results for the City's single-member districts (with data sources shown):

- Districts A-B-C each have a majority-Hispanic-citizen population of voting age; none of the other three does, although District D is not that far under majority and has a level of Hispanic-citizen-VAP very similar to that of the City as a whole (Exhibit 2).
- Districts A-B-C collectively contain roughly 58% of the City's total Hispanic citizen population of voting age; the other 42% reside outside the three-district area.

- About 60% of the total registered voters in Districts A-B-C are Spanish-surname, (which demographers use as a proxy for “Hispanic”); the other three do not have such a majority (Exhibit 2)
- Districts A-B-C collectively contain roughly 60% of the City’s total pool of Spanish-surname registered voters; the other 40% reside outside this area.

The following sections of this report examine the issues discussed in this introductory section in greater detail.

City of Pasadena Population Change: 1990-2014

The history of Hispanic population in the City of Pasadena is one of continuing growth. The following discussion examines Hispanic demographic change between the 1990 Census and the most recent population estimates (2014).

Exhibit 3-A presents total population (POP), voting-age population (VAP) and citizen-voting-age population (CVAP), for Hispanic and non-Hispanic City residents, in the three most recent censuses – 1990, 2000 and 2010. The contrast between Hispanic and non-Hispanic demographic change over this period is sharp. While Hispanic growth continued at a generally impressive pace, actually doubling the size of Hispanic VAP between 1990 and 2000, non-Hispanic growth was consistently negative. By 2010, Hispanic CVAP accounted for roughly 43% of the City’s pool of eligible voters – rising from just 18.7% 20 years earlier. Over the same time, non-Hispanic CVAP slides from 81.3% of total CVAP to just 57.1%. Similar patterns are apparent for POP and VAP.

Exhibit 3-B illustrates the findings just discussed from Exhibit 3-A. Exhibit 3-B should be viewed as supplemental to Exhibit 3-A, offering a visual perspective on the data.

At the same time Hispanic population was growing at a rapid pace, Hispanic residents were spreading out across the City. **Exhibits 4-A and 4-B** each show three census block maps – one each for 1990, 2000 and 2010. The three maps track the widening distribution of Hispanic VAP and CVAP across the City during the period 1990-2010. In particular, the maps illustrate the growth and dispersion of census blocks with majority-Hispanic VAP and majority-Hispanic CVAP. By 2010, what appears to be most of the blocks in the northern sector of the City – home to much of the City’s population – had become majority-Hispanic VAP (Exhibit 4-A), with a significant number of these blocks also having become majority-Hispanic CVAP (Exhibit 4-B). Thus, growth of Hispanic VAP and CVAP during this period is not limited to certain parts of the City, but can be seen covering much of the City’s more populated areas.

The combination of Exhibits 3-A, 4-A and 4-B, which pertain to the two most recently completed decades, paints a picture of robust Hispanic growth, accompanied by the continuing decline in non-Hispanic population.

The American Community Survey (ACS) is a relatively new Census Bureau program designed to track demographic change for states, counties and smaller communities. With the capability to produce demographic data more frequently than once every ten years, the ACS now collects much of the data formerly collected through the census.

ACS offers a range of data products for metropolitan cities. In the case of Pasadena, ACS surveys can be used to track annual population growth beginning with the 2005 survey cycle and running for an entire decade through 2014. This sort of information provides a valuable perspective on more recent demographic change for the City.

Exhibit 5-A contains two panels. The upper panel presents the trend line for each of two demographic measures designed to provide insight into recent Hispanic growth. The lower panel represents the source table for these (and several other) measures, compiled from the annual ACS surveys for 2005-2014.

The first measure presented in the upper panel of Exhibit 5-A is the citizenship rate for Hispanic residents of voting age. Defined as the ratio of Hispanic CVAP to Hispanic VAP, this measure indicates the extent to which Hispanic residents of voting age were US citizens at the time of each survey and thus, eligible to register to vote.

The second measure in the upper panel of Exhibit 5-A is the Hispanic share of total CVAP. This measure shows the ethnic composition of the citywide pool of eligible voters (CVAP) at the time of each ACS survey.

In the case of both measures, whether one examines the data values in the Exhibit 5-A table (lower panel) or the plots in the Exhibit 5-A chart (upper panel), the trend over the last decade in Hispanic VAP citizenship and the corresponding trend in Hispanic share of total CVAP are decidedly positive. More and more Hispanic residents of voting age residing in the City are US citizens. In the face of declining non-Hispanic population, a growing share of the City's pool of eligible voters is Hispanic.

According to Exhibit 5-A (bottom panel), the citizenship rate for Hispanic VAP appears to have increased from the low-to-mid 50% range around 2005 to the mid-to-high 60% range by 2014 – a notable change. We should note that the citizenship rates fluctuate from year to year, owing to the effect of sampling error (which is larger for the 1-Year ACS than a multi-year ACS because 1-Year estimates are based on a smaller sample).

Exhibit 5-A (bottom panel) also presents estimates of the Hispanic share of total CVAP for the period 2005-2014. According to these estimates, Hispanic citizens of voting age rose from around 40% of total CVAP in 2005 to something on the order of 50% by 2014 – another notable increase. These results apply citywide, not to areas within the City.

Exhibit 5-B, included in this report to supplement Exhibit 5-A, shows the more recent trend in Hispanic VAP citizenship and Hispanic share of total CVAP with ACS results that are subject to somewhat less sampling error. A casual inspection of Exhibit 5-B

shows that both the rate of Hispanic VAP citizenship and the Hispanic share of total CVAP follow the same general trend reported for Exhibit 5-A. Because 3-Year ACS estimates are based on a larger sample (what amounts to a 3-year moving average), the margin of error to which these results are subject can be expected to be smaller, providing a somewhat clearer picture of change.

Whether using the 1-Year or 3-Year ACS, the findings concerning the citizenship rate for Hispanic VAP and the Hispanic share of total CVAP are basically the same – both measures experienced impressive growth over the decade 2005-2014, while the non-Hispanic share of total CVAP continued to decline during the same period. The one advantage of the 1-Year ACS over the 3-Year ACS is that the data are more recent. The 3-Year data, which cover 2011-2013, are anywhere from two to four years old at this writing. Thus, the 47.2% Hispanic share of total CVAP shown in Exhibit 5-B is roughly equivalent to a 2012 rate – not a current rate. Given the trend in this share, were a 3-Year ACS available centered on the current year, the estimated Hispanic share would almost certainly be at or above 50%.

Another comparison involving Hispanic citizenship warrants attention. At 67.0%, the citywide citizenship rate for Hispanic VAP from the 2014 1-Year ACS (Exhibit 5-A) is substantially higher than the rate for Harris County (55.7%) and only slightly below the rate for the State of Texas (69.7%). Similar results can be obtained using the 3-Year ACS, but the estimates are older (as discussed in the preceding paragraph).

Not only can we draw upon the decennial census and newer federal survey programs like the ACS to examine the trend in the City's Hispanic population growth, but we also can take advantage of certain administrative-record data collected by state and local agencies that reflect demographic change. Two sources demographers often use are public school enrollment data and voter registration data. Both sources provide data based on counts (not estimates), which can help reduce margins of error.

The City of Pasadena is served by four different school districts – Pasadena ISD, Deer Park ISD, Clear Creek ISD and La Porte ISD. **Exhibit 6** shows the relation between City boundaries and the boundaries of the four districts. As the table inset on the map indicates, the vast majority (80.2%) of the City's population resides in Pasadena ISD. About 82% of the City's school-age population (under 18) lives in Pasadena ISD.

Texas school districts tabulate annual enrollment by race and Hispanic origin. These data, which represent the official enrollment count taken every October, are compiled and published by the Texas Education Agency (TEA). **Exhibits 7-A and 7-B** present the annual trend in the Hispanic share of total public school enrollment for the period 1994-2014. Each chart clearly shows the strong positive trend in Hispanic enrollment. Pasadena ISD, with most of the City's school-age population, rose dramatically from about 47% Hispanic in 1994 to more than 80% Hispanic in 2014. The other three districts all experienced an equally strong upward trend in Hispanic enrollment during the same period (Exhibits 7-A, 7-B). **Exhibit 8-A** contains the source data for Exhibits 7-A and 7-B.

Exhibit 8-B, which incorporates total and Hispanic enrollment data for the four districts, shows just how dramatically Hispanic school-age population increased over the two decades leading up to the present (2014). Pasadena ISD, once again with the vast majority of the City's population, experienced growth in Hispanic enrollment between 1994 and 2014 that more than doubled the district's 1994 Hispanic count; the change over this period is 150.37% (Exhibit 8-B). During the same 20 years, the district lost more than 11,000 non-Hispanic students – just over half the total non-Hispanic count reported for 1994.

The historical record is about the same for the other three districts. Deer Park, Clear Creek and La Porte all experienced substantial declines in non-Hispanic enrollment from 1994 to 2014, against a backdrop of rapid Hispanic enrollment growth.

The annual enrollment record for the four districts provides a clear picture of significant demographic change over the two most recently completed decades. Not only do the data exhibit a strong positive trend, but they also point to future growth in the Hispanic population of voting age. In effect, today's school enrollment is tomorrow's CVAP.

Demographers also can employ voter registration data to get some idea of growth in Hispanic population. These data are subject to certain well-known limitations:

- The identification of "Hispanic" is based on an extensive list of Spanish surnames (not the same method used on the federal census to identify Hispanic persons).
- "Hispanic" and "Spanish-surname" do not necessarily refer to the same attribute.
- Not every person with a Spanish surname is Hispanic; not every Hispanic person has a surname on the list (while extensive, the list is not considered complete).
- Not all Hispanic citizens of voting age register to vote.

Despite these limitations, voter registration data with added Spanish-surname coding provide yet another way to investigate Hispanic population growth through the use of administrative records. In this case, the relevant population is persons of voting age (18+), which can complement demographic data from school enrollment records.

Exhibit 9 contains data on total and Spanish-surname registered voters (SSRV), by City Council district for the current 6-2 districting plan, for two dates (January 2011 and March 2015). The table note to Exhibit 9 identifies the data sources and explains how the data were assembled for this exhibit. We combined Districts A, B, C, E, and F into two groups--one of districts (A, B, C) with majority-Spanish-surname registration and one of districts (E, F) with relatively small SSRV. District D, which roughly mirrors the City as a whole, does not fit within either group and is shown separately.

While voter registration data may be used in other parts of this matter, the main focus here is what the data indicate about the Spanish-surname ("Hispanic") mix of a major segment of City population – persons of voting age (18+). By using voter registration

data to infer change in Hispanic CVAP, we can get some verification of whether the Hispanic share of total CVAP has increased in recent years. The March 2015 data were obtained specifically for this matter. With the January 2011 data, which were obtained during the 2011 redistricting cycle and were available for use, we have two points in time required to examine change.

According to Exhibit 9, looking at the three more heavily Hispanic districts (A-B-C), almost 52% (a clear majority) of registered voters in the three districts were Spanish-surname at the time of the January 2011 registration file. Then, just over four years later, at the time of the March 2015 file, about 60% of registered voters were Spanish-surname. These results apply not only to the three-district grouping, but also to each individual district.

With respect to the other three districts (D-E-F), none of which had a Spanish-surname majority in either January 2011 or March 2015, the Spanish-surname share of total registered voters increased over the four-year period. District D rose from 35.76% SSRV in January 2011 to 42.53% SSRV in March 2015. Interestingly, at both times, District D is relatively close to the City as a whole with respect to Spanish-surname share of total registration.

At the same time the number of SSRV was growing between January 2011 and March 2015, the number of non-SSRV was declining. In January 2011, non-SSRV accounted for almost half of total registered voters in Districts A-B-C. Four years later, in March 2015, the non-SSRV share for this 3-district aggregate had dropped to roughly 40%. The same negative trend in non-SSRV can be seen in the other three districts (D-E-F).

Once again, using administrative-record data, this time for registered voters, we find clear evidence of Hispanic growth, both in absolute terms and as a percentage of the whole.

In summary, considering the recent demographic history of the City (specifically the year period from the 1990 Census through the most recent estimates in 2014), all the major sources of data demographers routinely use to track population growth point to continuing and reasonably robust growth in Hispanic population.

City of Pasadena Population Change: 2015-2035

While the City has enjoyed several decades of largely uninterrupted Hispanic growth, the major question now is whether this sort of growth can be expected to continue, at least for the near future.

Because the future is uncertain, even the future tomorrow, population projections are inherently speculative. The best projections follow a clear methodology and carefully articulate assumptions about future components of change (births, deaths, migration).

Future growth for the City can be examined at two levels. One considers demographic change for Harris County, the parent county for the City. In Texas, the county is the smallest geographic unit for which projections by age group are available for Hispanic population (age group is needed to obtain voting-age population). While county-level projections are available from different vendors around the state, the set most widely used is the set produced on a regular basis by the Texas State Data Center (TSDC). The TSDC falls under the Office of the Texas State Demographer and is an affiliated operation of the Census Bureau's Federal-State Cooperative Program for Population Estimates.

The second level considers total population growth for the City (along with growth for households and jobs). The City simply is too small to develop the sort of projections used by the TSDC for counties. The TSDC approach (the cohort-component method) offers the only conceptually and methodologically correct way to project population by age, race and Hispanic origin. Most demographers would not attempt to calibrate this method for a city the size of Pasadena.

Without Hispanic projections directly for Pasadena, a "second-best" methodology is to combine the following observations to reach a conclusion about the future direction of Hispanic growth for the City:

- The City's Hispanic population has experienced sustained and sometimes dramatic growth since the time of the 1990 Census, growth which has spread well across the City during the two most recently completed decades (Exhibits 4-A, 4-B, 5-A, 5-B).
- A full decade of annual estimates from the ACS indicates a rising rate of citizenship among Hispanic residents of voting age, which when combined with current growth in Hispanic VAP, yields an upward trend in Hispanic CVAP. This upward trend has been sufficiently strong to increase the Hispanic share of total CVAP to new levels. Indeed, the two most recent years of this decade (2013 and 2014) saw the sample-based Hispanic share fluctuate around 50% (2013 above 50%, 2014 slightly below) (Exhibits 5-A, 5-B).
- This positive trend in Hispanic CVAP also is reflected in City voter registration data, which show a significant increase in the Spanish-surname share of total registered voters between 2011 and 2015 (Exhibit 9).
- The rapid growth of Hispanic enrollment in the City's major school district since the early 1990s not only underscores the growth trend in Hispanic population, but also raises the prospect of a growing supply of Hispanic residents who will reach voting age each year (perhaps many of whom will remain in the City following graduation) (Exhibits 6, 7-A, 7-B, 8-A, 8-B).
- Projections of Hispanic population by age group from the Texas State Data Center, projections commonly used by demographers, clearly indicate continuing growth in Hispanic VAP for Harris County, the City's parent county (**Exhibits 10-A, 10-B**).

- Projections of total population, households and jobs for the City from the Houston-Galveston Area Council, a well-respected association of local governments known for its regional growth forecasts, indicate continuing growth not only for population, but also for households and jobs, although growth is modest (**Exhibits 11-A, 11-B**).

The following points explain the logic behind combining the preceding observations to reach a conclusion concerning the future direction of the City's Hispanic population:

First, consider major historical trends in demographic change (1990-2014):

- The Hispanic population of the City has been growing for some time (at least from the time of the 1990 Census); more recent data – census, ACS, school enrollment records, to mention a few of the more important sources – indicate that not only is the total number of Hispanic residents growing, but so is Hispanic VAP and CVAP. Growth in CVAP – which reflects not only growth in VAP but also the rising rate of Hispanic citizenship – is fast approaching a majority of total CVAP.
- With such a formidable track record of growth (one leading right up to the present), the City's Hispanic population has strong growth momentum, growth which should carry into the near-term future.

Next, consider projections of future demographic change (2015-2035):

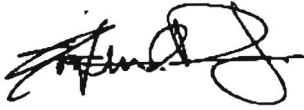
- Population projections for Harris County, the City's parent county and the smallest local geographic unit for which reliable Hispanic projections are available, indicate continued Hispanic growth for the period 2015-2035, although at a rate well under the pace reported for more recent decades; most of the lower growth is due to the use of net migration rates 50% lower than those from 2000-2010 baseline decade.
- The City's total population also is projected to grow over the next two decades, but at rates measurably slower than the rapid pace of previous decades.

Finally, combine all the pieces to reach a conclusion:

- In a county where Hispanic population has been growing for some time, and where current projections point to continued growth over the next two decades, the odds the City (with its history of Hispanic growth momentum) will share in the county's future Hispanic growth (at least to some extent) would seem quite good. Such a scenario remains highly likely.
- The combination of continuing growth in Hispanic VAP (from some combination of aging and net migration, however modest) and an increasing rate of Hispanic VAP citizenship should fuel the growth of Hispanic CVAP in the City, not only increasing the City's pool of eligible voters over time, but also the Hispanic share of that pool.

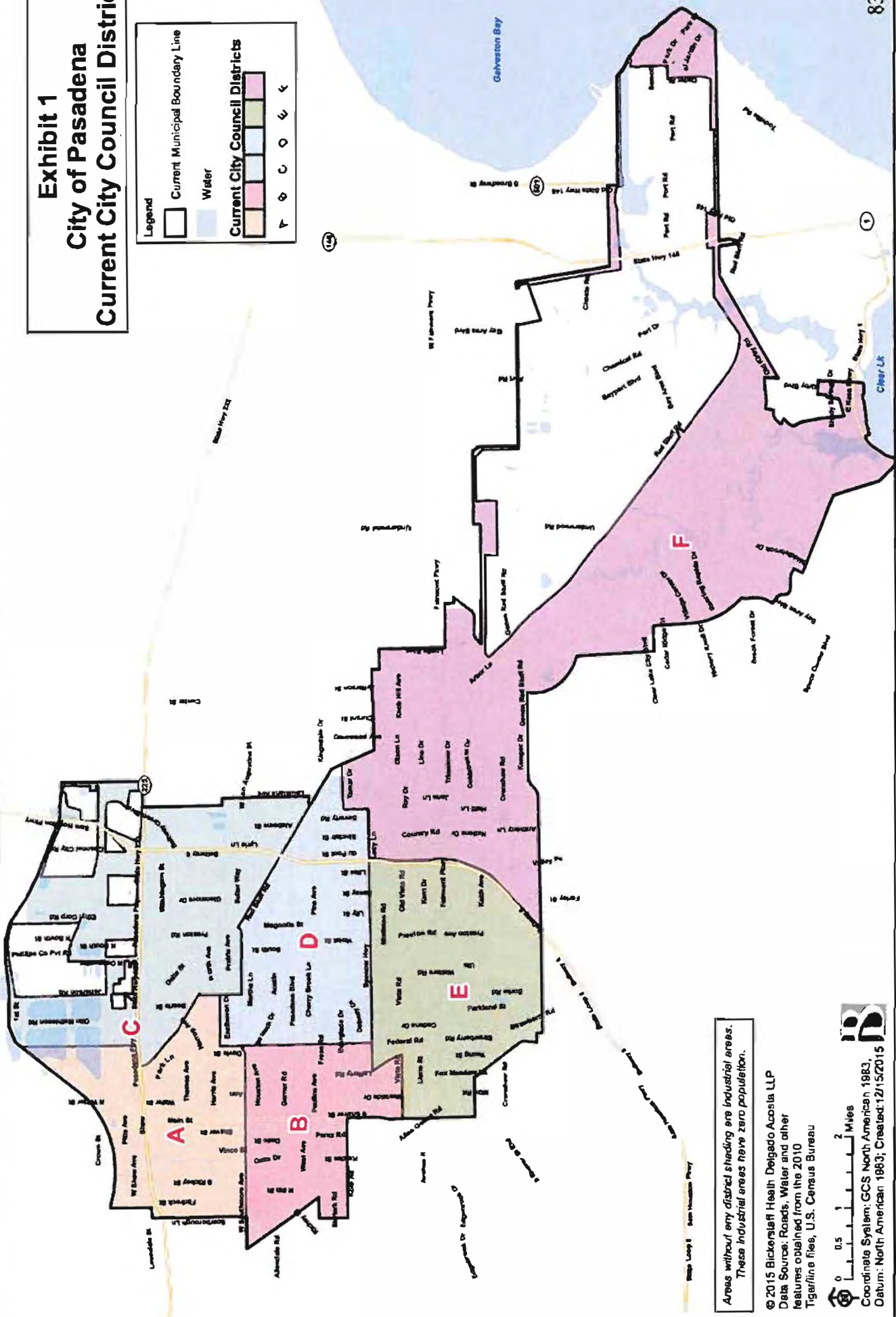
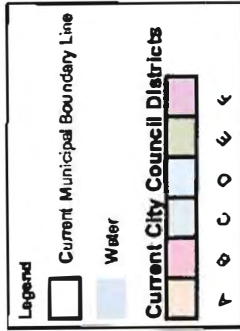
- Indeed, if the Hispanic share of total CVAP has not already reached 50% – and the most recent ACS data show the share hovering slightly above and slightly below the 50% mark – it almost certainly will exceed 50% in the very near future. The data presented in this report strongly support this outcome. Indeed, all the data point to an increasing Hispanic share of total CVAP for the City. There is no suggestion in the data that the current positive trend in Hispanic growth will abate.

Respectfully submitted:



Norfleet W. (Bill) Rives
Defendant's Expert
December 16, 2015

Exhibit 1 City of Pasadena Current City Council Districts



Areas without any district shading are industrial areas.
These industrial areas have zero population.

© 2015 Bickersstaff Heath Delgado Acosta LLP
Data Source: Roads, Water and other
features obtained from the 2010
Tigerline file, U.S. Census Bureau

0 0.5 1 2 Miles
Coordinate System: GCS North American 1983,
Datum: North American 1983; Created: 12/15/2015

Exhibit 2

City of Pasadena Current 6-2 Plan										
Detailed 2010 Census Total and Voting Age Population										
District	Persons	Hispanic	% of Total Hispanic Population	Anglo	% of Total Anglo Population	Black	% of Total Black Population	All Other	All Other Population	% of Total All Other Population
A	24,607	21,263	86.41%	2,745	11.16%	352	1.43%	247	1.00%	
B	24,997	19,496	77.99%	4,773	19.09%	427	1.71%	301	1.20%	
C	24,719	17,459	70.63%	6,555	26.52%	400	1.62%	304	1.23%	
D	24,800	16,504	66.55%	7,438	29.99%	521	2.10%	337	1.36%	
E	24,752	11,732	47.40%	11,143	45.02%	674	2.72%	1202	4.86%	
F	25,460	6,258	24.58%	16,247	63.81%	607	2.38%	2345	9.21%	
Totals	149,335	92,712	62.08%	48,901	32.75%	2,981	2.00%	4736	3.17%	
District	Total VAP	Hispanic VAP	% of Total Hispanic VAP	Anglo VAP	% of Total Anglo VAP	Black VAP	% of Total Black VAP	All Other VAP	% of All Other VAP	
A	15,962	13,224	82.85%	2,333	14.62%	226	1.42%	179	1.12%	
B	16,551	11,993	72.46%	4,045	24.44%	294	1.78%	220	1.33%	
C	16,599	10,825	65.21%	5,301	31.94%	260	1.57%	215	1.30%	
D	17,068	10,083	59.08%	6,415	37.58%	326	1.91%	244	1.43%	
E	18,460	7,608	41.21%	9,475	51.33%	488	2.64%	886	4.80%	
F	18,860	3,998	21.20%	12,762	67.67%	396	2.10%	1701	9.02%	
Totals	103,500	57,731	55.78%	40,331	38.97%	1,990	1.92%	3445	3.33%	
2009-2013 ACS 5-Year Special Tabulation File Reporting Citizen Voting Age Population by Race and Ethnicity										
DISTRICT	Total CVAP	Hispanic CVAP	% Hispanic CVAP	Non-Hispanic CVAP	% Non-Hispanic CVAP	Anglo CVAP	% Anglo CVAP	Black CVAP	% Black CVAP	All Other CVAP
A	9,837	7,037	71.5%	2,810	28.6%	2,418	24.6%	246	2.5%	160
B	11,104	6,445	58.0%	4,668	42.0%	4,313	38.8%	258	2.3%	83
C	12,709	7,798	61.4%	4,923	38.7%	4,317	34.0%	244	1.9%	362
D	12,990	5,889	45.3%	7,101	54.7%	6,467	49.8%	450	3.5%	174
E	15,676	5,512	35.2%	10,144	64.7%	8,693	55.5%	663	4.2%	772
F	17,513	3,903	22.3%	13,596	77.6%	11,857	67.7%	601	3.4%	1261
Totals	79,829	36,584	45.8%	43,242	54.2%	38,065	47.7%	2,462	3.1%	2812
Total Voters and SSRV: March 2015										
	Total Voters	District	% All Other CVAP	SSRV	% SSRV					
A	5,662	A	1.6%	3,982	70.33%					
B	7,073	B	0.7%	4,036	57.06%					
C	8,641	C	2.8%	4,727	54.70%					
D	8,309	D	1.3%	3,534	42.53%					
E	9,965	E	4.9%	2,957	29.67%					
F	14,496	F	7.2%	2,198	15.16%					
Totals	54,146	Totals	3.5%	21,434	39.59%					

Table Notes: VAP=Voting Age Population, CVAP=Citizen Voting Age Population, SSRV=Spanish Surname Registered Voters

Data Sources: Total and SSRV records obtained from Harris County Elections; March 2015

Exhibit 3-A

Total, Voting Age and Citizen Voting Age Population, by Race and Hispanic Origin
Pasadena City, Texas
1990, 2000 and 2010

Panel A -- Hispanic Population

Demographic Group	1990	2000	2010	%Change 1990-2000	%Change 2000-2010
Total Population	34,411	68,348	92,692	98.6	35.6
Share of Total POP (%)	28.8%	48.2%	62.2%		
Voting Age Population	20,468	41,367	57,710	102.1	39.5
Share of Total VAP (%)	24.5%	42.7%	55.9%	74.0	31.0
Citizen Voting Age Population	14,330	23,805	33,742	66.1	41.7
Share of Total CVAP (%)	18.7%	30.6%	42.9%		

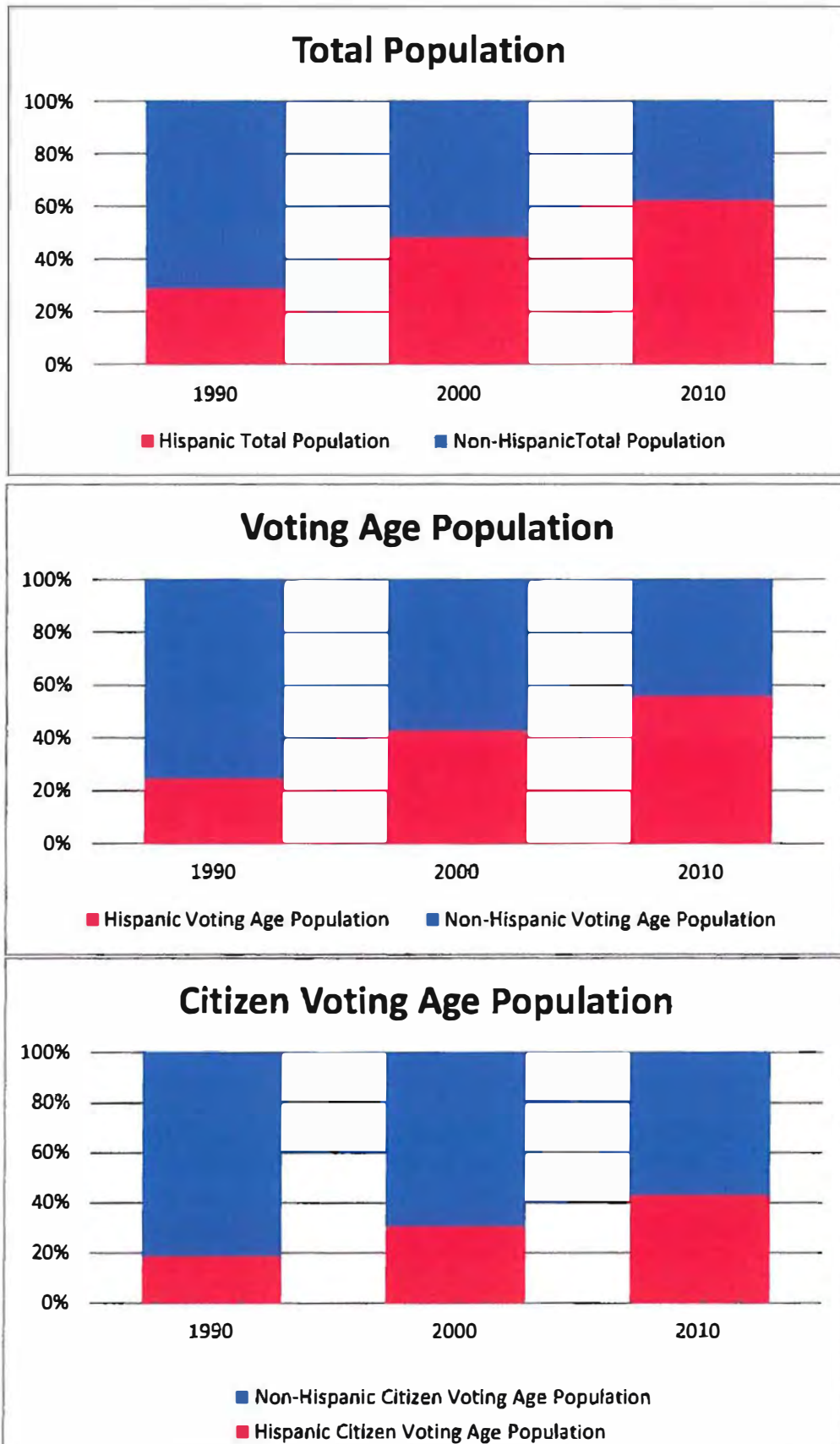
Panel B -- Non-Hispanic Population

Demographic Group	1990	2000	2010	%Change 1990-2000	%Change 2000-2010
Total Population	84,952	73,326	56,351	(13.7)	(23.2)
Share of Total POP (%)	71.2%	51.8%	37.8%		
Voting Age Population	63,006	55,580	45,557	(11.8)	(18.0)
Share of Total VAP (%)	75.5%	57.3%	44.1%	(24.0)	(23.0)
Citizen Voting Age Population	62,253	54,111	44,828	(13.1)	(17.2)
Share of Total CVAP (%)	81.3%	69.4%	57.1%		

Data Sources:

Total POP and VAP based on 1990, 2000 and 2010 Censuses
1990 CVAP based on Census Special Tabulation 127-J
2000 CVAP based on Census Special Tabulation 56
2010 CVAP based on 2008-2012 5-Year ACS centered on 2010

**Total, Voting Age, and Citizen Voting Age Population
By Race and Hispanic Origin for Pasadena City: 1990, 2000, 2010**

**Data Sources:**

Total POP and VAP based on 1990, 2000 and 2010 Censuses

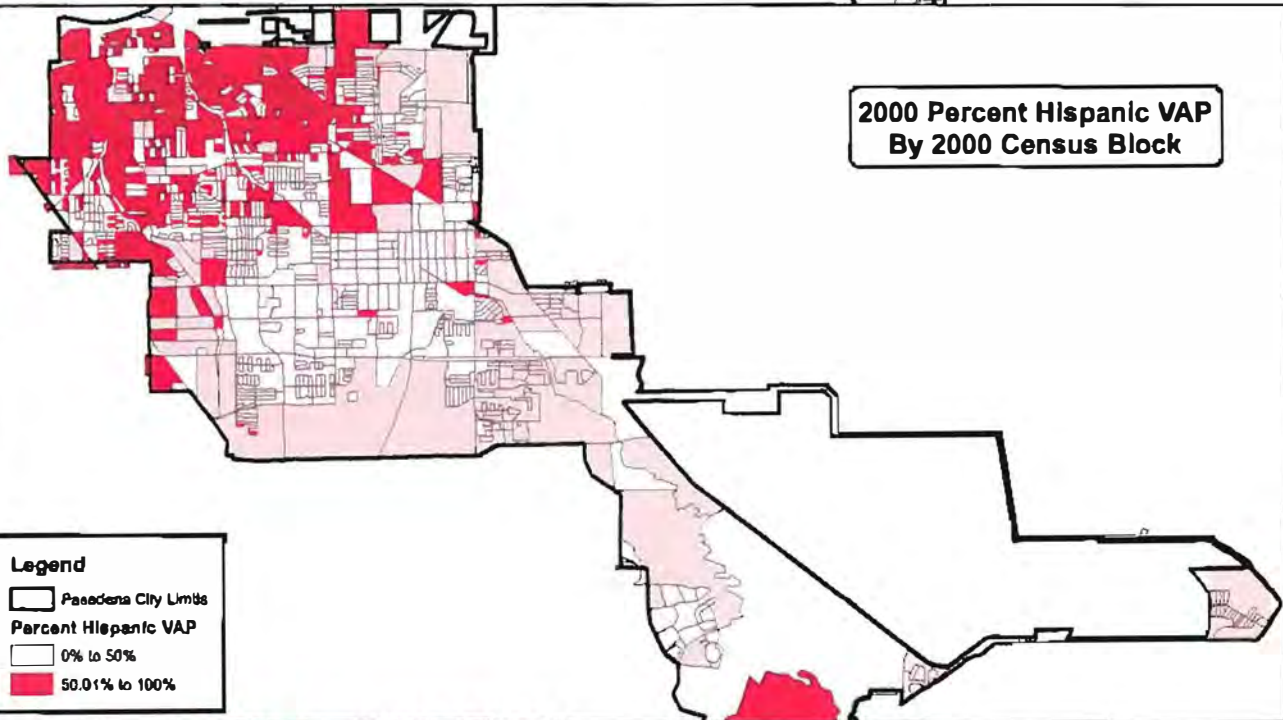
1990 CVAP based on Census Special Tabulation 127-J

2000 CVAP based on Census Special Tabulation 56

2010 CVAP based on 2008-2012 5-Year ACS centered on 2010

Exhibit 4-A
City of Pasadena, Texas
A Look at the Growth of
Hispanic Voting Age Population
By Census Block for 1990, 2000, 2010

1990 Percent Hispanic VAP
By 1990 Census Block



2010 Percent Hispanic VAP
By 2010 Census Block

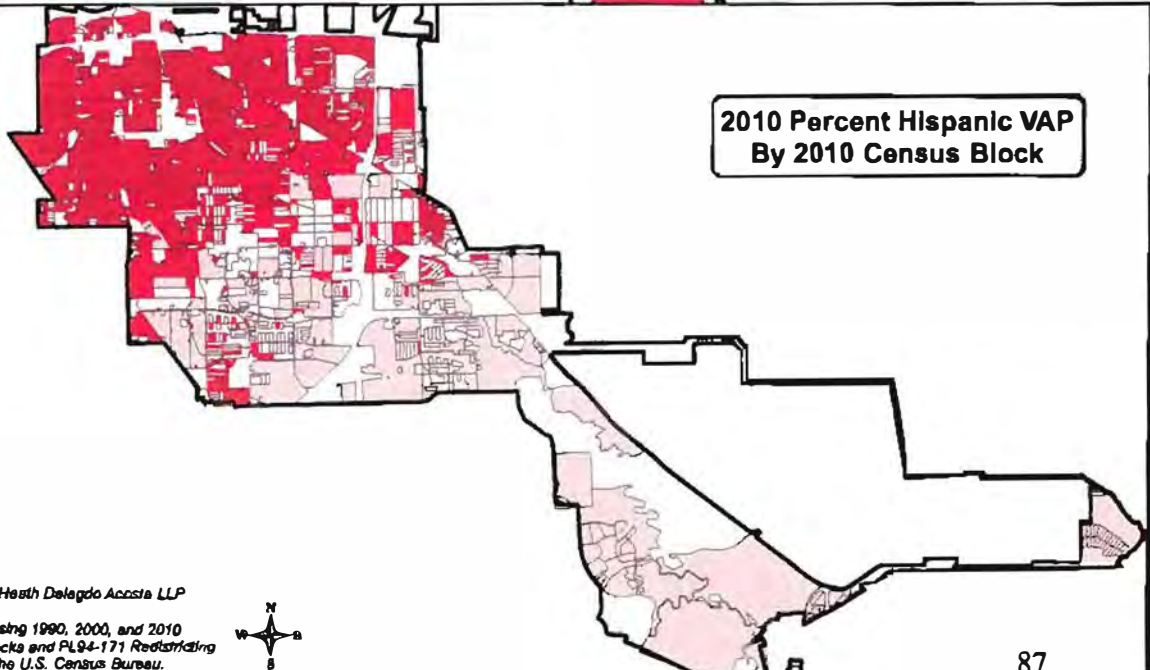
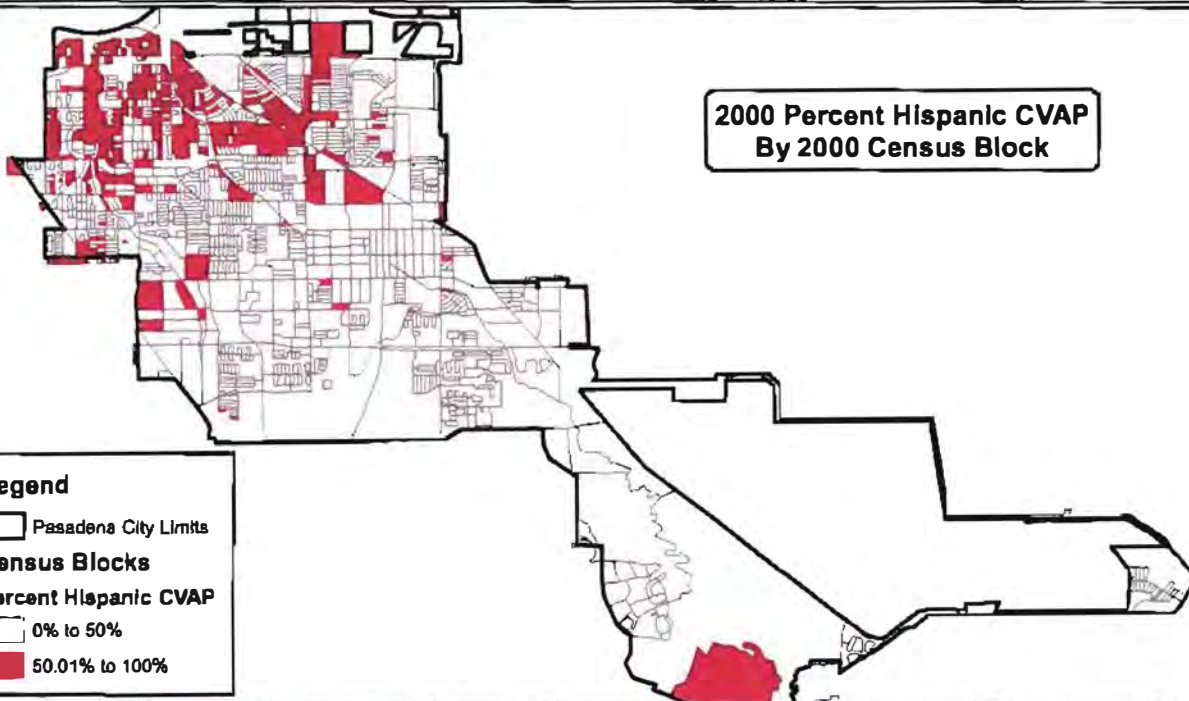


Exhibit 4-B
City of Pasadena, Texas
A Look at the Growth of
Hispanic Citizen Voting Age Population
By Census Block for 1990, 2000, 2010

**1990 Percent Hispanic CVAP
By 1990 Census Block**



**2000 Percent Hispanic CVAP
By 2000 Census Block**

**2010 Percent Hispanic CVAP
By 2010 Census Block**

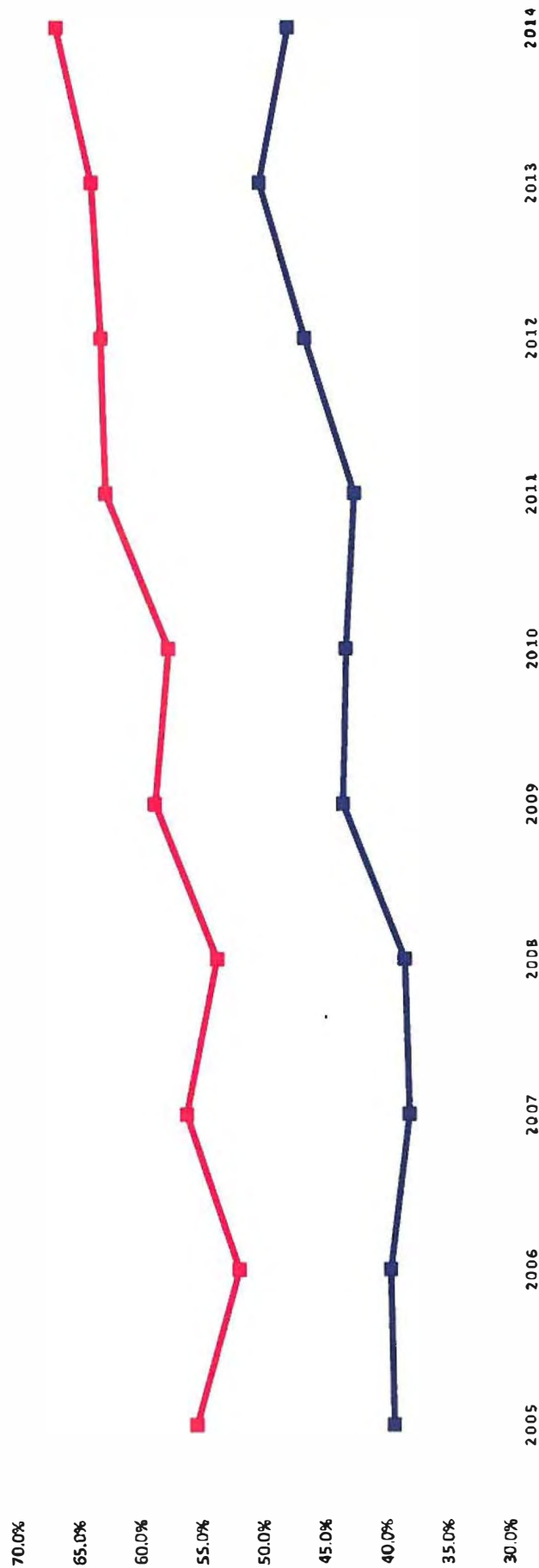


Bickelstaff Health Delegates Acosta LLP
 12/14/2015
 Prepared using 1990, 2000, and 2010
 Census Blocks with 1990 Special Tabulation SP127J,
 2000 Special Tabulation 56, and 2009-2013
 ACS Special Tabulation from the U.S. Census Bureau.
 Pasadena city limit lines obtained in 1990 and 2000 from
 the U.S. Census Bureau and obtained in 2014 from the
 City of Pasadena.



Exhibit 5-A

Citizen Voting Age Population, by Race and Hispanic Origin
Pasadena City, Texas
1-Year ACS Estimates for 2005 through 2014



Demographic Group	ACS 2005	ACS 2006	ACS 2007	ACS 2008	ACS 2009	ACS 2010	ACS 2011	ACS 2012	ACS 2013	ACS 2014
Total CVAP	77,080	74,434	81,872	83,331	73,816	77,459	83,491	82,948	80,834	88,638
Hispanic CVAP	30,420	29,617	31,353	32,257	32,283	33,684	35,727	38,795	40,783	42,647
Citizenship Rate (%)	55.5%	52.1%	56.4%	54.0%	59.0%	57.9%	63.0%	63.4%	64.1%	67.0%
Share of Total CVAP (%)	39.5%	39.8%	38.3%	38.7%	43.7%	43.5%	42.8%	46.8%	50.5%	48.1%
Non-Hispanic CVAP	46,660	44,817	50,519	51,074	41,533	43,775	47,764	44,153	40,051	45,991
Citizenship Rate (%)	97.5%	97.6%	97.4%	98.2%	98.0%	96.5%	95.8%	96.6%	97.0%	98.4%
Share of Total CVAP (%)	60.5%	60.2%	61.7%	61.3%	56.3%	56.5%	57.2%	53.2%	49.5%	51.9%

Source:

Figures computed from Bureau of the Census, 1-Year ACS for Pasadena City, 2005-2014 (Data Tables B05003 and B05003I)

Exhibit 5-B

Citizen Voting Age Population, by Race and Hispanic Origin

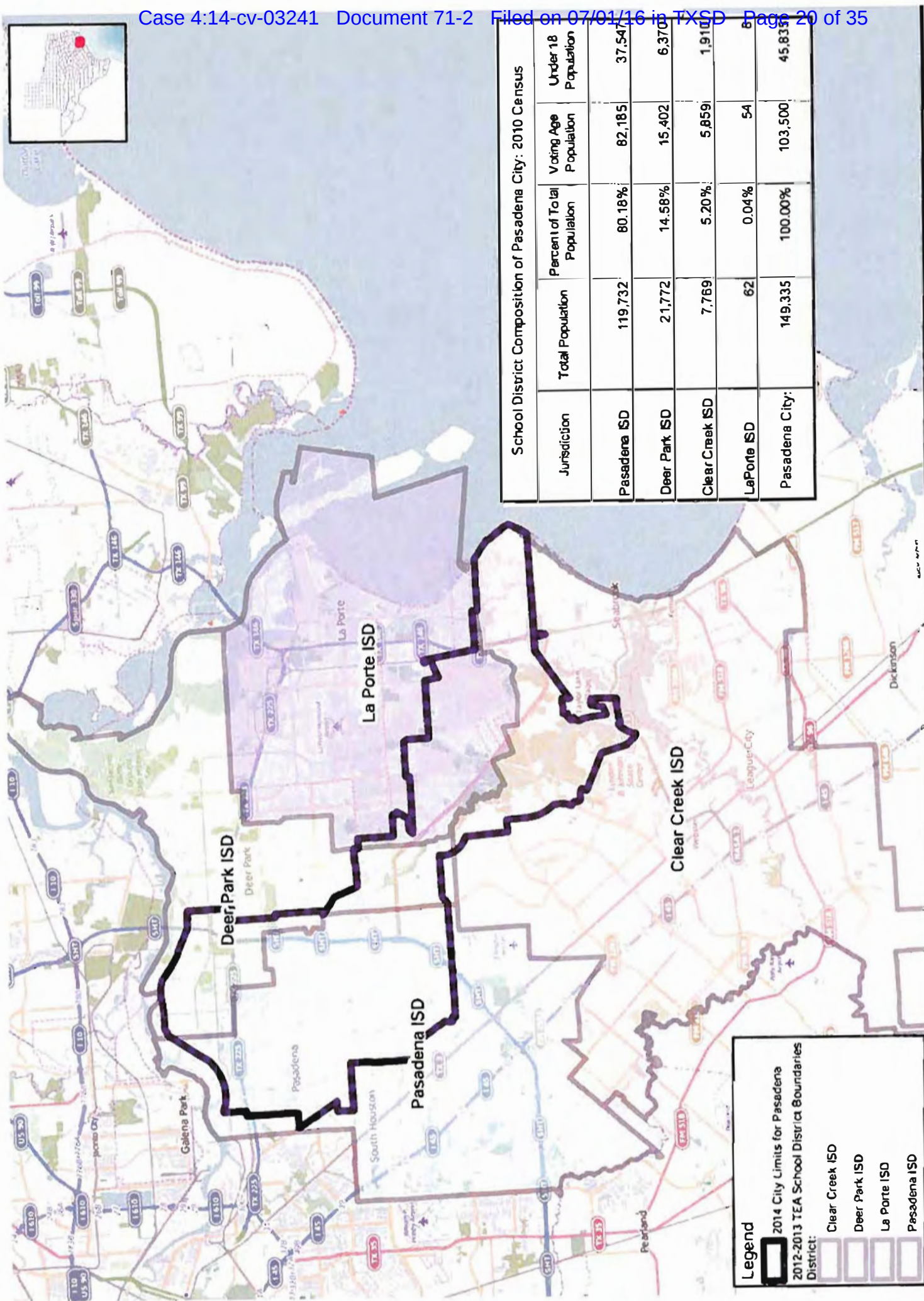
Pasadena City, Texas

3-Year Non-Overlapping ACS Estimates for 2005-2007 through 2011-2013

Demographic Group	ACS 2005-2007	ACS 2008-2010	ACS 2011-2013
Total CVAP	78,988	76,355	82,637
Hispanic CVAP	29,911	31,474	39,024
Citizenship Rate (%)	55.3%	57.2%	63.7%
Share of Total CVAP (%)	37.9%	41.2%	47.2%
Non-Hispanic CVAP	49,077	44,881	43,613
Citizenship Rate (%)	97.6%	97.5%	96.5%
Share of Total CVAP (%)	62.1%	58.8%	52.8%

Source:

Figures computed from Bureau of the Census, 3-Year ACS for Pasadena City
2005-2007, 2008-2010, 2011-2013 (Data Tables B05003 and B05003I)



School District Composition of Pasadena City: 2010 Census				
Jurisdiction	Total Population	Percent of Total Population	Voting Age Population	Under 18 Population
Pasadena ISD	119,732	80.18%	82,185	37,547
Deer Park ISD	21,772	14.58%	15,402	6,370
Clear Creek ISD	7,769	5.20%	5,859	1,910
LaPorte ISD	62	0.04%	54	8
Pasadena City:	149,335	100.00%	103,500	45,835

Annual Percent Hispanic Enrollment by School District
Pasadena ISD and Deer Park ISD
1994-2014

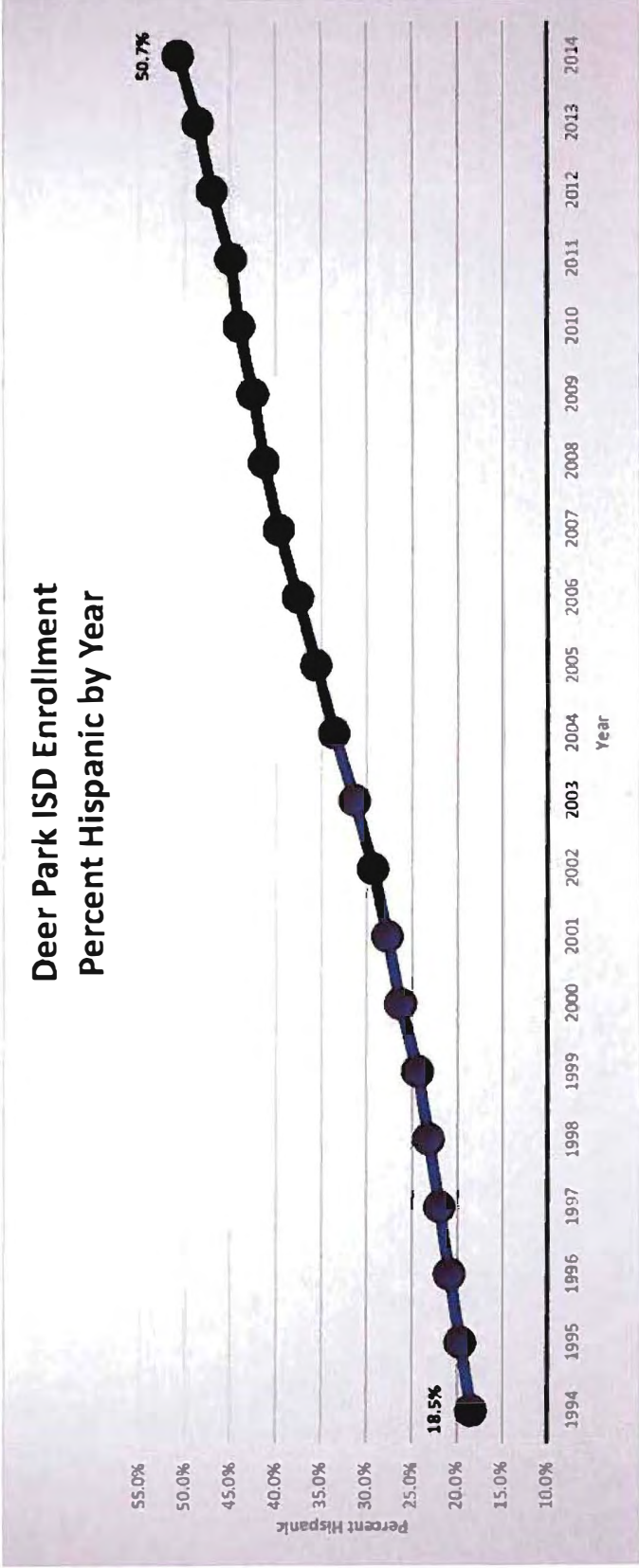
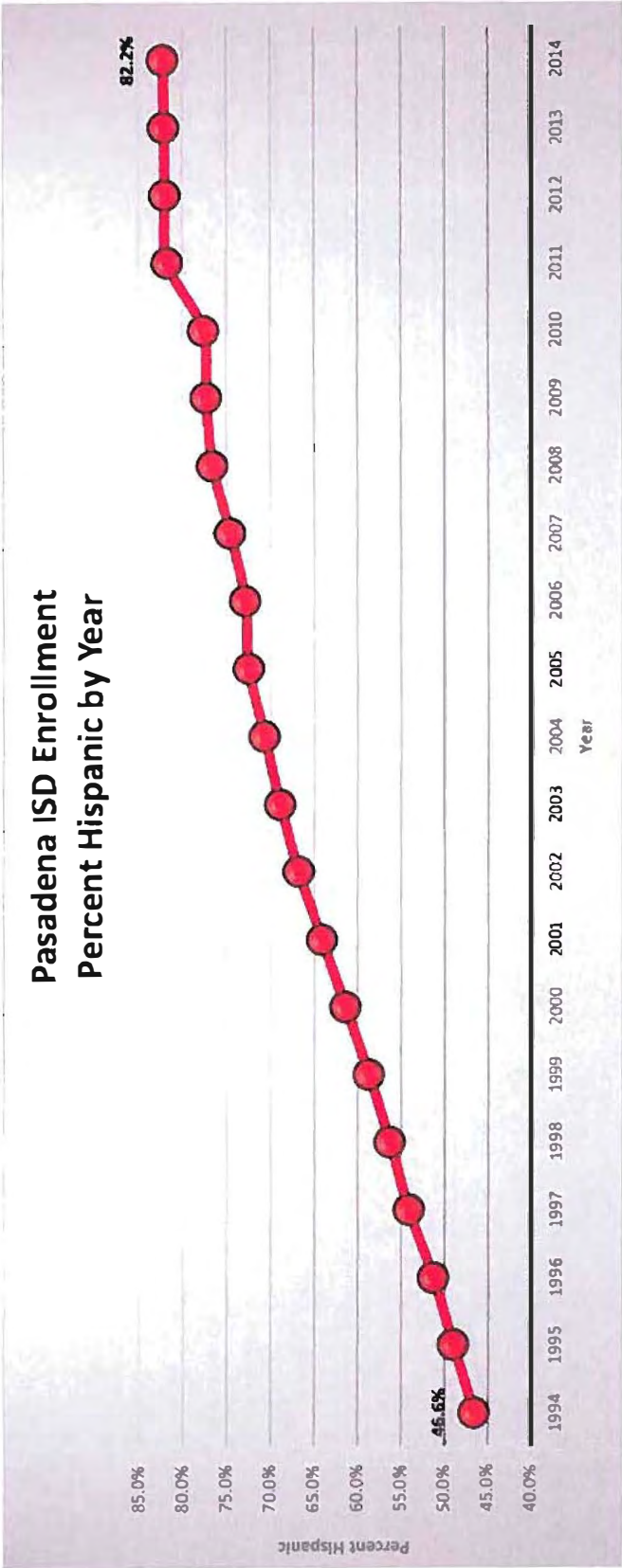


Exhibit 7-B
Annual Percent Hispanic Enrollment by School District
Clear Creek ISD and La Porte ISD
1994-2014

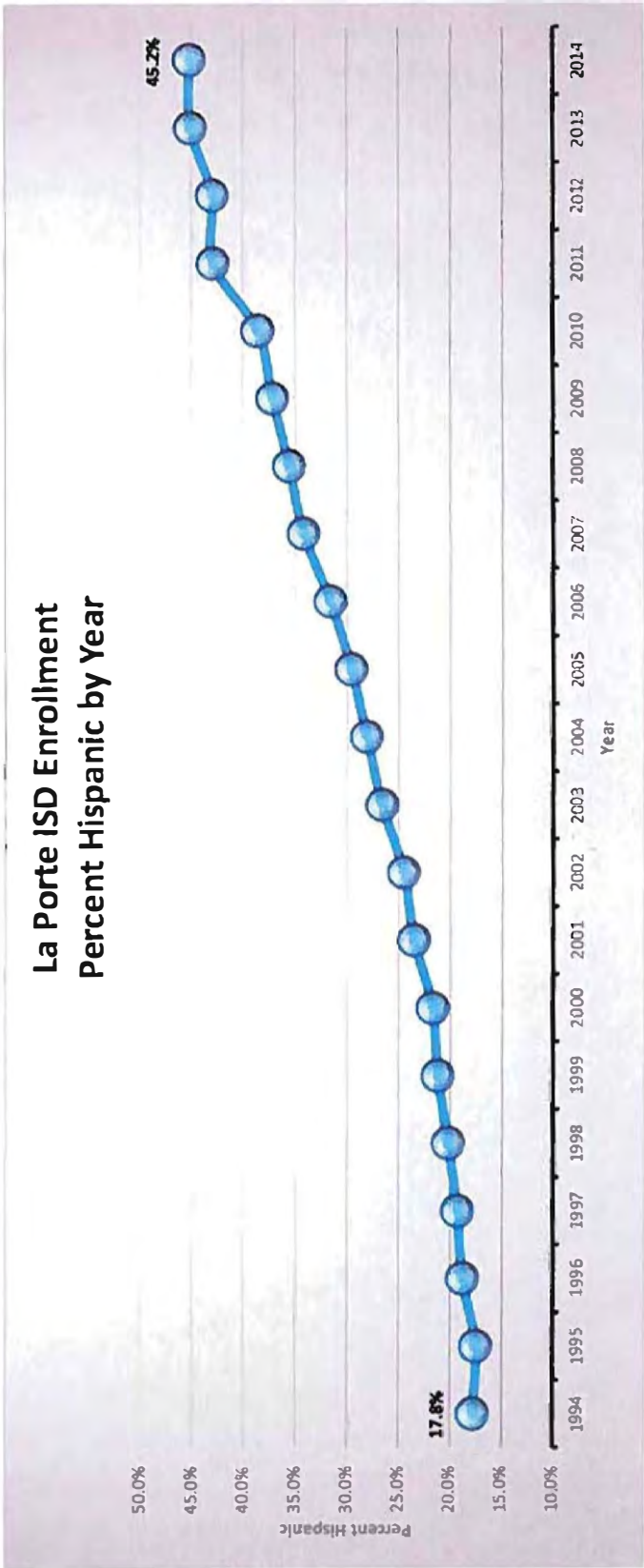
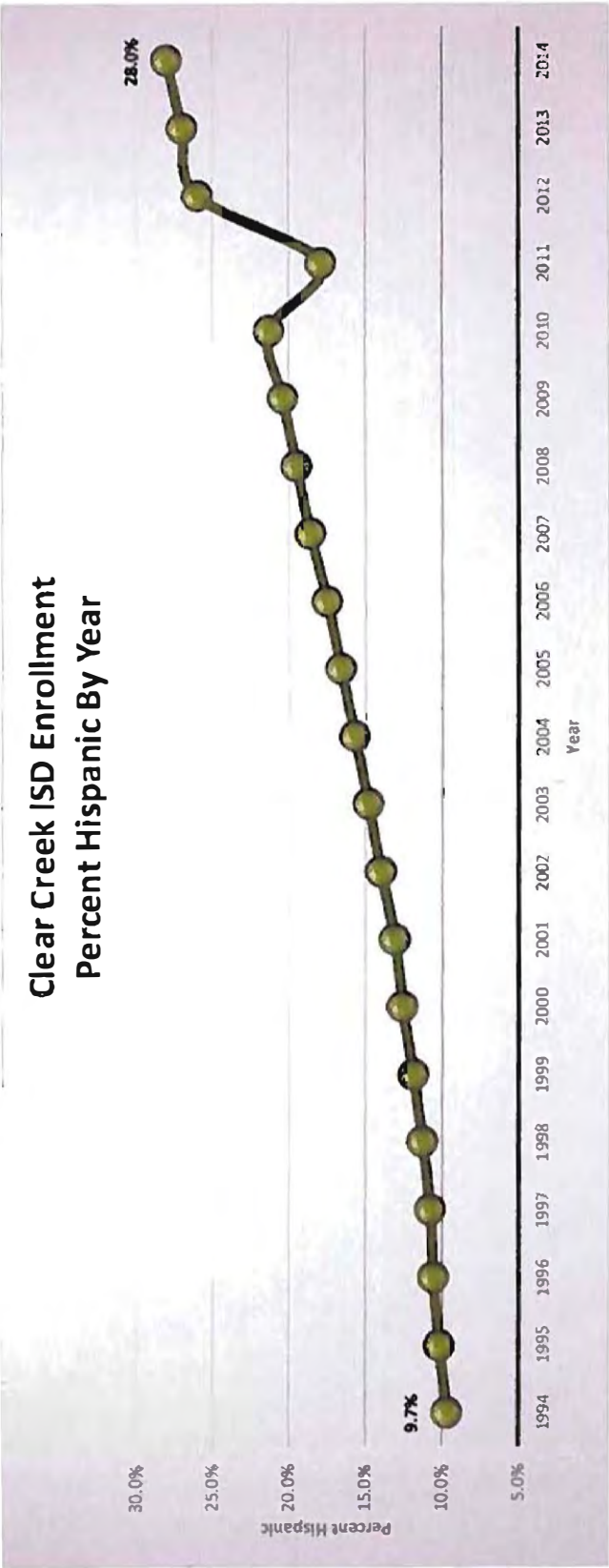


Exhibit 8-A

Percent Hispanic Enrollment by School District
 Pasadena ISD, Deer Park ISD, Clear Creek ISD, La Porte ISD
 1994-2014

Year	School District (ISD)			
	Pasadena	Deer Park	Clear Creek	La Porte
1994	46.6%	18.5%	9.7%	17.8%
1995	49.0%	19.7%	10.2%	17.5%
1996	51.3%	20.9%	10.6%	18.8%
1997	54.1%	22.0%	10.8%	19.3%
1998	56.3%	23.2%	11.3%	20.2%
1999	58.7%	24.4%	11.9%	21.2%
2000	61.4%	26.3%	12.6%	21.7%
2001	64.1%	27.7%	13.1%	23.5%
2002	66.8%	29.3%	14.0%	24.5%
2003	68.9%	31.3%	14.8%	26.6%
2004	70.7%	33.6%	15.7%	28.1%
2005	72.5%	35.6%	16.6%	29.6%
2006	72.9%	37.6%	17.5%	31.6%
2007	74.6%	39.7%	18.6%	34.2%
2008	76.6%	41.3%	19.5%	35.6%
2009	77.3%	42.5%	20.4%	37.2%
2010	77.6%	44.0%	21.3%	38.6%
2011	81.7%	44.9%	17.9%	42.9%
2012	82.0%	47.0%	26.0%	43.0%
2013	82.1%	48.5%	27.0%	45.1%
2014	82.2%	50.7%	28.0%	45.2%

Data Source: Texas Education Agency, Research and Analysis Division.

Note: Figures represent enrollment taken on October 31 of each year.

Exhibit 8-B

**Total and Hispanic Annual Enrollment by School District
Pasadena ISD, Deer Park ISD, Clear Creek ISD, La Porte ISD
1994 and 2014**

School District	Total Enrollment			Hispanic Enrollment		
	1994 Enrollment	2014 Enrollment	Percent Change 1994-2014	1994 Hispanic Enrollment	2014 Hispanic Enrollment	Percent Change 1994-2014
Pasadena ISD	39,265	55,577	41.54%	18,299	45,815	150.37%
Deer Park ISD	11,024	13,140	19.19%	2,044	6,909	238.01%
Clear Creek ISD	24,541	40,812	66.30%	2,391	11,707	389.63%
La Porte ISD	7,384	7,648	3.58%	1,319	3,521	166.94%

Data Source: Texas Education Agency, Research and Analysis Division.

Note: Figures represent enrollment taken on October 31 of each year.

Exhibit 9
City of Pasadena
Comparison of Total and Spanish Surname Registered Voters
for the 6-2 Plan in the Years 2011 and 2015

January 2011 Registered Voters: Plan 6-2 (Adopted March 2014)					
District	Total Voters	SSRV	Percent SSRV	Non-SSRV	Percent Non-SSRV
Districts A-B-C	22,682	11,769	51.89%	10,913	48.11%
District D	8,829	3,157	35.76%	5,672	64.24%
Districts E-F	25,667	4,841	18.86%	20,826	81.14%
Totals:	57,178	19,767	34.57%	37,411	65.43%

March 2015 Geocoded Voter Results: Plan 6-2 (Adopted March 2014)					
District	Total Voters	SSRV	Percent SSRV	Non-SSRV	Percent Non-SSRV
Districts A-B-C	21,376	12,745	59.62%	8,631	40.38%
District D	8,309	3,534	42.53%	4,775	57.47%
Districts E-F	24,461	5,155	21.07%	19,306	78.93%
Totals:	54,146	21,434	39.59%	32,712	60.41%

Data Sources and Methodology:

Voter Registration file obtained from Harris County Elections March 23, 2015.

Voters geocoded to 9-1-1 point file and voters not matching the 9-1-1 point file were matched to the rooftop using Harris County Appraisal District Data and Google Maps.

Voters were coded Spanish Surname based upon their last name match to the 1990 Census Master Spanish Surname list.

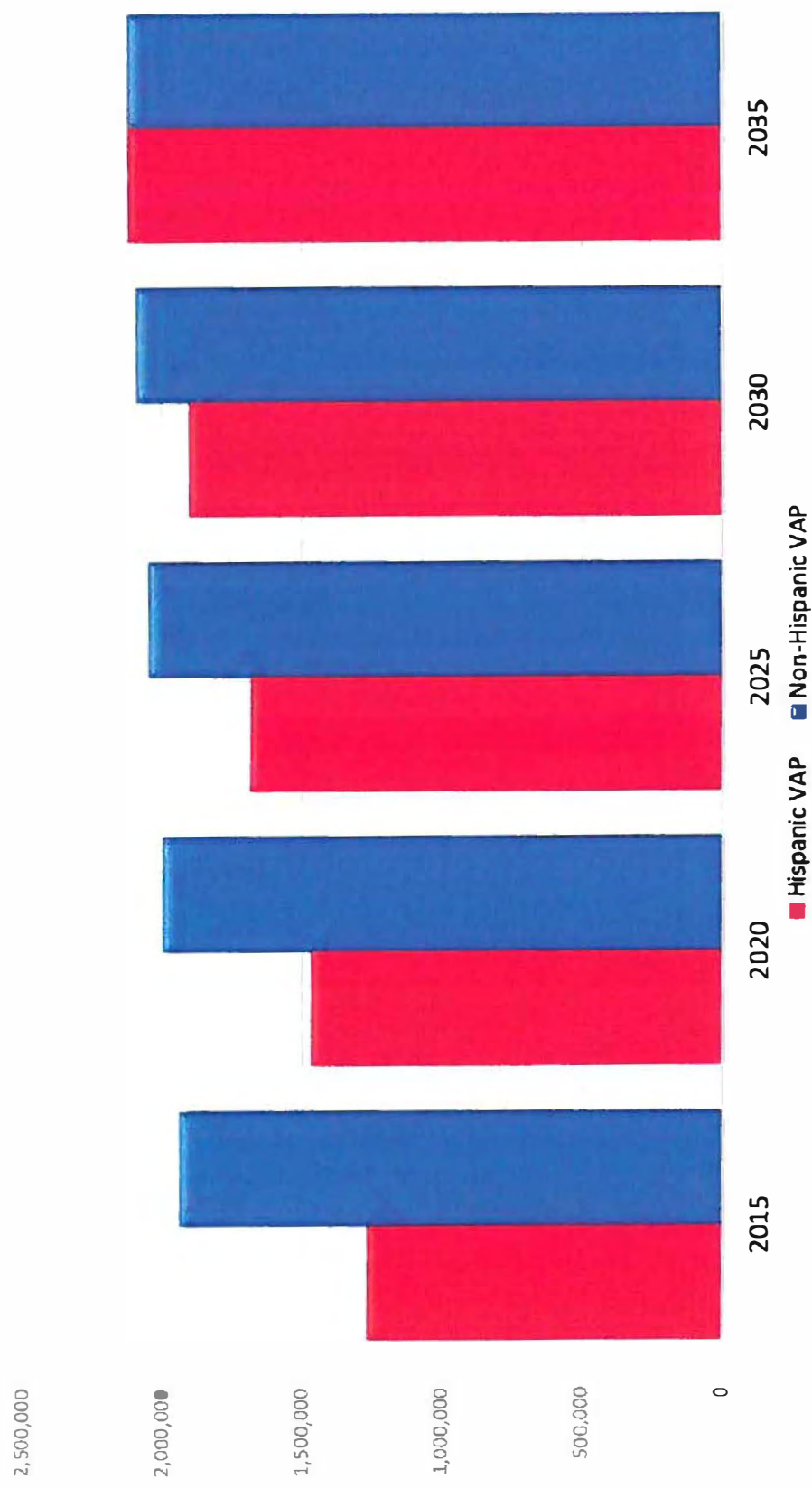
Hypenated last names were then manually matched if either the left, right or both sides of the hypenated name matched a last name on the Master Spanish Surname list.

2011 registered and Spanish Surname voters were obtained from the Texas Secretary of State on January 11, 2011.

The voters were allocated to the 2010 voting tabulation districts and then disaggregated by voting age population to the 2010 Census block.

Those voter counts by Census block were then allocated to the single member district.

Exhibit 10-A
Projections of Hispanic and Non-Hispanic Voting Age Population
Harris County, Texas
2015 Through 2035 at 5-Year Intervals



Note: The projections shown are based on the State Data Center's "0.5 200-2010" projection series which assumes county net migration will continue at a rate equal to 50% of the rate observed between the 2000 and 2010 Censuses. This series basically represents a middle ground between a low-growth and a high-growth series. See the methodology section of the report cited in the Source note (immediately below).

Source: Texas State Data Center, *Projections of the Population of Texas and Texas Counties by Age, Sex and Race/Ethnicity – 2010-2050*

Exhibit 10-B

**Projections of Total and Hispanic Voting Age Population
Harris County, Texas
2015 through 2035 at 5-Year Intervals**

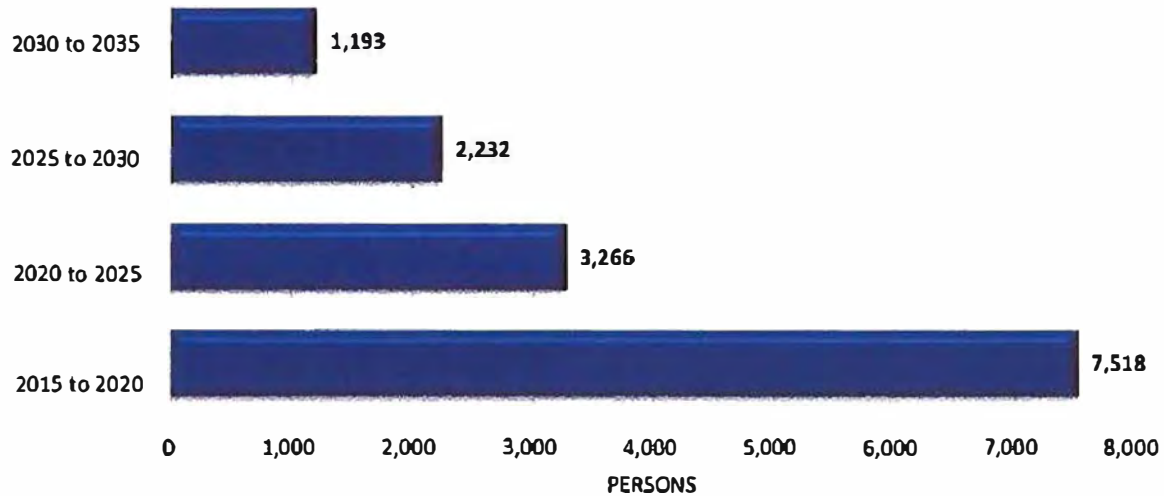
Year	Total VAP	Hispanic VAP	Hispanic Share	Non-Hispanic VAP
2015	3,201,861	1,265,361	39.5%	1,936,500
2020	3,464,177	1,466,729	42.3%	1,997,448
2025	3,731,622	1,683,895	45.1%	2,047,727
2030	3,991,551	1,902,825	47.7%	2,088,726
2035	4,237,471	2,119,344	50.0%	2,118,127

Note: The projections shown are based on the State Data Center's "0.5 200-2010" projection series which assumes county net migration will continue at a rate equal to 50% of the rate observed between the 2000 and 2010 Censuses. This series basically represents a middle ground between a low-growth and a high-growth series. See the methodology section of the report cited in the Source note (immediately below)

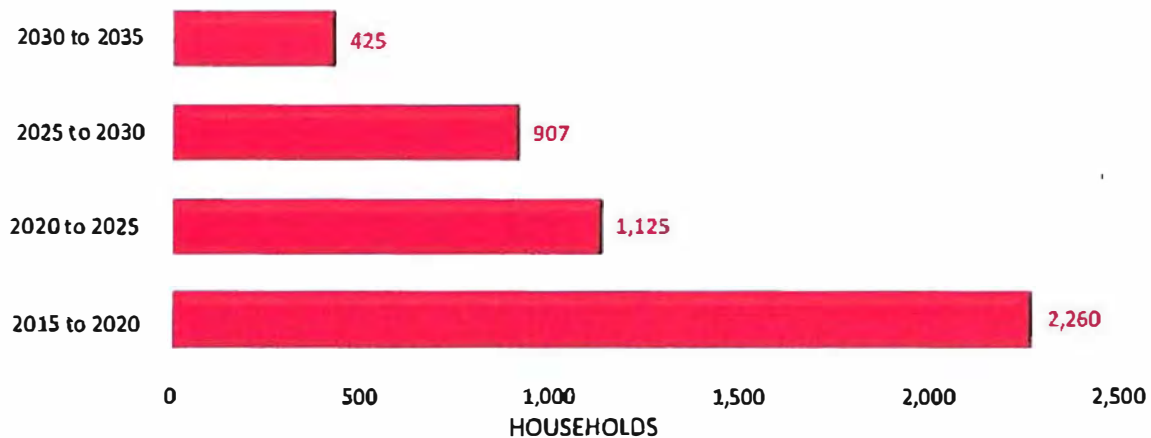
Source: Texas State Data Center, *Projections of the Population of Texas and Texas Counties by Age, Sex and Race/Ethnicity -- 2010-2050*

**Growth In Total Population, Total Households, and Total Jobs
Pasadena City, Texas
2015 Through 2035 at 5-Year Intervals**

Growth in Household Population From 2015 to 2035



Growth in the Number of Households From 2015 to 2035



Growth In the Number of Jobs From 2015 to 2035

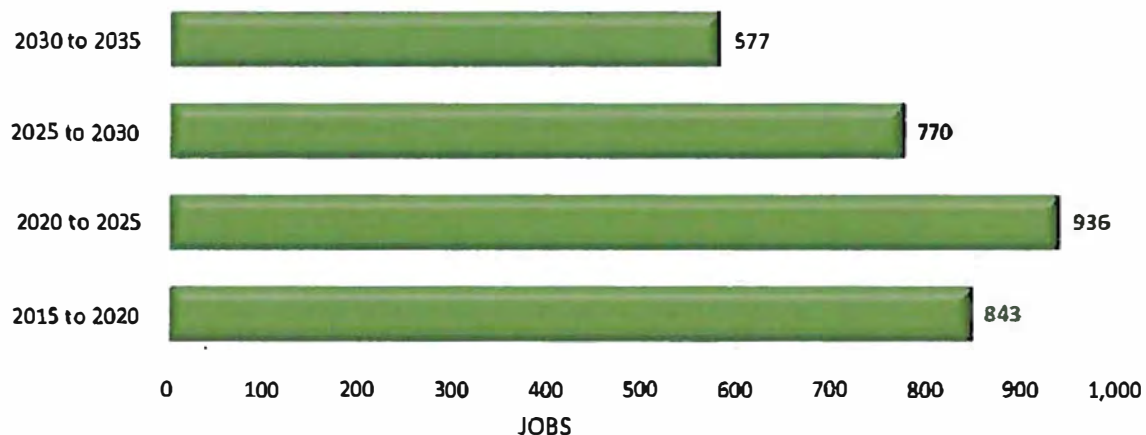


Exhibit 11-B

Projections of Total Population, Total Households and Total Jobs
Pasadena City, Texas
2015 through 2035 at 5-Year Intervals

Year	Household Population		Households		Jobs	
	Number	Change	Number	Change	Number	Change
2015	154,708	NAP	51,075	NAP	56,772	NAP
2020	162,226	7,518	53,335	2,260	57,615	843
2025	165,492	3,266	54,460	1,125	58,551	936
2030	167,724	2,232	55,367	907	59,321	770
2035	168,917	1,193	55,792	425	59,898	577

NAP = Not Applicable

Source: Houston-Galveston Area Council, *Regional Growth Forecast, 2nd Quarter 2015 Update*

Statement of Credentials

BILL RIVES

Consulting Demographer

3630 Romnay Road
Columbus, Ohio 43220
TEL and FAX (614) 326-0613
CELL (614) 582-5429
brives@pipeline.com

EDUCATION

Ph.D. (Economics)	Duke University
National Institutes of Health Fellow	1971
M.A. (Economics)	Duke University
	1970
A.B. (Economics)	The University of Missouri at Columbia
	1967
Postdoctoral Research Fellow	Office of Population Research
• Demography	The Woodrow Wilson School
• Economics	Princeton University
• Statistics	1970-72

PROFESSIONAL EXPERIENCE

2001 – Present	Senior Lecturer Department of Finance Fisher College of Business The Ohio State University Columbus, Ohio
1993 – 2001	Professor Chair (1998-2002) Department of Finance Professor Graduate School of Business Academic Dean (2000-2002) Franklin University Columbus, Ohio

PROFESSIONAL EXPERIENCE

(continued)

1984 – 1993	Executive Vice President N. W. Rives & Company, Inc. Consulting Demographers & Statisticians Houston and San Antonio, Texas
1984 – 1987	Associate Professor Graduate Program in Healthcare Management Trinity University San Antonio, Texas
1982 – 1984	Visiting Professor Jones Graduate School of Administration Rice University Houston, Texas
1982 – 1984	Senior Fellow and Director Houston Metropolitan Research Program Rice Center for Research and Development Rice University Houston, Texas
1977 – 1979	Visiting Research Fellow Population Division U.S. Bureau of the Census Washington, DC
1972 – 1984	Assistant Professor (1972 – 1976) Associate Professor (1976 – 1984) College of Urban Affairs and Public Policy Associate Professor (1976 – 1984) Department of Mathematical Sciences The University of Delaware Newark, Delaware

UNIVERSITY TEACHING EXPERIENCE

(undergraduate and graduate courses)

Statistical Methods (all areas and applications)
Demographic Analysis
Small-Area Population Estimates and Projections
Survey Research
Business Research Methods
Forecasting Methods for Management and Research

UNIVERSITY TEACHING EXPERIENCE

(continued)

Corporate Finance
Risk Management and Insurance
Life and Health Insurance
Property and Casualty Insurance
Enterprise Risk Management

Healthcare Economics
Macroeconomic Theory and Policy
Econometric Methods and Models
Economics of Aging and Retirement
Regional Economic Growth and Development

SERVICE TO PROFESSIONAL ASSOCIATIONS AND ORGANIZATIONS

I have served on standing committees, boards of directors, editorial boards, funding review panels and professional advisory groups for numerous organizations, of which the following organizations are representative:

U.S. Department of Commerce	American Statistical Association
U.S. Army Corps of Engineers	Houston Chamber of Commerce
The Rand Corporation	National Institute of Mental Health
Population Association of America	South Texas Council of Governments
U.S. Bureau of the Census	National Institute on Aging
San Antonio Chamber of Commerce	U.S. Department of Veterans Affairs

PROFESSIONAL PUBLICATIONS

I have published articles in professional journals and periodicals, books, chapters in books, technical monographs and numerous reports from sponsored research. The following list identifies representative works. (Sponsored research reports prepared for private clients have been excluded at their request):

"Fuel Risk Management at American Electric Power"
(with Greg Niehaus, Laura Thomas, Douglas Buck, and Dwayne Elliott)
RISK MANAGEMENT AND INSURANCE REVIEW, Vol. 15, No. 1, 2012

DEMOGRAPHIC ANALYSIS FOR MENTAL HEALTH PLANNING
(with H. Goldsmith and W.J. Serow)
Demographic Research Monograph Series
Epidemiology-Demography-Biometry Program
National Institute of Mental Health, 1991
Revised edition published by the University of Wisconsin Press, 1996

PROFESSIONAL PUBLICATIONS

(continued)

"Strategic financial planning for hospitals – Demographic considerations"
In DEMOGRAPHICS – A CASEBOOK FOR BUSINESS AND GOVERNMENT
edited by H. Kintner, P. Morrison, T. Merrick and P. Voss
The Rand Corporation and Westview Press, 1994

INTRODUCTION TO APPLIED DEMOGRAPHY
(with W.J. Serow)
Series on Quantitative Applications in the Social Sciences
Sage Publications, 1984

"Interstate migration of the elderly – Demographic and policy implications"
(with K.D. McLeod, J.R. Parker and W.J. Serow)
RESEARCH ON AGING, 1984

"Using population forecasts to allocate public funds"
AMERICAN DEMOGRAPHICS, 1981

"Designing census public use samples for aging research"
Special issue on Aging and Society, RESEARCH ON AGING, 1981

THE USE OF POPULATION PROJECTIONS TO ALLOCATE PUBLIC FUNDS
The Rand Paper Series P-6584, The Rand Corporation, 1980

"The determination of economic loss in litigation involving wrongful death or injury
– Conceptual and methodological issues"
(with M. Brams)
JOURNAL OF CONTEMPORARY LAW, 1979

"Measures of community health status for health planning"
(with A. Mooney)
HEALTH SERVICES RESEARCH, 1978

EXPERIMENTAL ESTIMATES OF THE COMPLETENESS OF COVERAGE OF
STATE POPULATION IN THE 1970 CENSUS – DEMOGRAPHIC ANALYSIS
(with J. Siegel, J. Passel and J. Robinson)
Special Populations Studies, Series P-23, U.S. Bureau of the Census, 1977

"The effect of census errors on life table estimates of Black mortality"
AMERICAN JOURNAL OF PUBLIC HEALTH, 1977

"Forecasting public school enrollment"
SOCIOECONOMIC PLANNING SCIENCES, 1977

PROFESSIONAL PUBLICATIONS

(continued)

"The effect of census errors on federal employment statistics"
INDUSTRIAL RELATIONS, 1976

"On the history of the mathematical theory of games"
HISTORY OF POLITICAL ECONOMY, 1975

"An econometric model of the tobacco industry"
(with T. Naylor and J. Vernon)
REVIEW OF ECONOMICS AND STATISTICS, 1969

SPONSORED RESEARCH

Research projects, including consulting engagements, have been supported by both public and private sources. The following list identifies representative clients:

U.S. Bureau of the Census
National Institute on Aging
National Institute of Mental Health
USAA Life Insurance Company
HCA Healthcare Corporation

Aetna Life Insurance Company
Commonwealth of Pennsylvania
Houston Independent School District
San Antonio Independent School District
Chicago City Council

Houston City Council
Harris County (Houston) Hospital District
The Monsanto Company
USAA Real Estate Company
American Express Company

American Association of Retired Persons (AARP)
Alamo Heights Independent School District (San Antonio)
Katy Independent School District (Houston)
North East Independent School District (San Antonio)
Rhode Island State Senate (Providence)

City of Farmers Branch (Texas) City Council
City of Irving (Texas) City Council
Irving Independent School District (Texas)
City of McKinney (Texas) City Council
Office of the Texas Attorney General

GENERAL LITIGATION SUPPORT

I have provided technical assistance to support federal and state litigation, of which the following areas are representative:

Congressional and legislative redistricting
EPA Superfund (toxic waste) management
Title VII employment discrimination

I have been qualified to testify as an expert witness in U.S. District Court, state courts, and before various federal and state regulatory panels.

REDISTRICTING PROJECTS AND VOTING RIGHTS LITIGATION SUPPORT

I have developed and evaluated redistricting plans, and assisted others with this work. I also have testified as an expert witness on demographic analysis, statistical analysis and census statistics in litigation arising under the federal Voting Rights Act.

Cases in which I have been deposed only, or been deposed and testified, include:

- *Campos, et al. vs. City of Houston* (H-91-0885)
US District Court for the Southern District of Texas, Houston Division
- *Valdespino, et al. vs. Alamo Heights Independent School District* (SA-95-CA-0817)
US District Court for the Western District of Texas, San Antonio Division
- *League of United Latin American Citizens, et al. vs. North East Independent School District* (SA-93-CA-483)
US District Court for the Western District of Texas, San Antonio Division
- *Barnett, et al. vs. City of Chicago* (92-C-1683) and *Bonilla, et al. vs. City of Chicago* (92-C-2666), consolidated for trial
US District Court for the Northern District of Illinois, Eastern Division
- *Sergio J. Rodriguez, et al. vs. Bexar County, Texas* (SA 01-CV-1049-WWJ)
US District Court for the Western District of Texas, San Antonio Division
- *Joseph F. Parella, et al. vs. William Irons, et al.* (C.A. No. 02-4578)
Superior Court of the State of Rhode Island and Providence Plantations
- *Valentine Reyes, et al. vs. City of Farmers Branch, Texas* (3:07-CV-900-M)
US District Court for the Northern District of Texas, Dallas Division
- *Manuel Benavidez vs. City of Irving, Texas* (3:07-CV-1850-P)
US District Court for the Northern District of Texas, Dallas Division
- *Manuel Benavidez vs. Irving (Texas) Independent School District* (3:08-CV-0924-D)
US District Court for the Northern District of Texas, Dallas Division
- *Shannon Perez, et al. vs. The State of Texas, et al.* (SA-11-CA-360-OLG-JES-XR)
US District Court for the Western District of Texas, San Antonio Division
(Consolidated cases, lead case civil action number cited)
- *Maria Fabela, et al. v. City of Farmers Branch, Texas* (CA 3:10-CV-01425-D)
US District Court for the Northern District of Texas, Dallas Division
- *Manuel Benavidez, J. de Leon & D. de Leon vs. Irving (Texas) Independent School District* (3:13-CV-0087-D)
US District Court for the Northern District of Texas, Dallas Division